

ABSTRACT

A method for operating a broadband lambda sensor for determining the concentration of oxygen in the exhaust gas of an internal combustion engine operated with a fuel-air mixture is provided. In this method, a pump voltage (U_p) is applied to the pump cell of the sensor, this voltage being set dependent on a Nernst voltage (U_N) tapped at the Nernst cell, and, dependent on the oxygen content of the exhaust gas, driving a cathodic or anodic pump current I_p via the pump cell. In order to maintain the measurement sensitivity of the sensor even during secondary fuel injection in lean operation and/or in "fast light off" operation, the polarity of the pump voltage (U_p) is repeatedly reversed during the duration of a secondary fuel injection and/or of the "fast light off" operation, so that an anodic pump current briefly arises that pumps oxygen ions into the measurement chamber, occupied by the measurement electrode of the Nernst cell and the inner electrode of the pump cell, in which chamber the oxygen ions oxidize the hydrocarbons.